JMYT-253US

Appln. No.: 10/019,903

Amendment Dated January 20, 2004 Reply to Office Action of October 20, 2003

<u>Amendments to the Claims</u>: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

- 1. (Currently Amended) A method for regenerating a catalytic fuel processor, wherein one component of the processor is a bed of reforming catalyst that reforms fuel thereby producing reformate having a concentration of hydrogen, while it the processor is being used to supply hydrogen to a fuel cell, comprising any one or more of the steps of:
 - continuing to pass fuel, air and steam through a the bed of reforming catalyst to produce reformate whilst the catalyst is and heating the bed of reforming catalyst heated by an external heat source such that the temperature of the catalyst may be adjusted to regenerate the bed of reforming catalyst,
 - continuing to pass fuel, air and steam through—a the bed of reforming catalyst to produce reformate and modulating the air and/or steam feed rate supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,
 - continuing to pass air, fuel and steam through—a the bed of reforming catalyst to produce reformate and modulating the feed-rate of the fuel supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,
 - continuing to pass fuel, air and steam through—a the bed of reforming catalyst to produce reformate and adding wherein—an oxygenate is added—to the feed supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,

and maintaining the hydrogen concentration (as measured in dry reformate) above 25% throughout the operation of the processor, wherein the hydrogen concentration is measured by gas chromatography after the reformate is passed through a drier.

2. (Currently Amended) A method for preventing or retarding the de-activation of a catalytic fuel processor wherein one component of the processor is a bed of reforming catalyst that reforms fuel thereby producing reformate having a concentration of hydrogen, while-it the processor is being used to supply hydrogen to a fuel cell comprising any one or more of the steps of:

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- continuing to pass fuel, air and steam through a the bed of reforming catalyst to produce reformate whilst the catalyst is and heating the bed of reforming catalyst heated by an external heat source such that the temperature of the catalyst may be adjusted to regenerate the bed of reforming catalyst,
- continuing to pass fuel, air and steam through—a the bed of reforming catalyst to produce reformate and modulating the air and/or steam feed rate supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,
- continuing to pass air, fuel and steam through-a the bed of reforming catalyst to produce reformate and modulating the feed-rate of the fuel supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,
- continuing to pass fuel, air and steam through—a the bed of reforming catalyst to produce reformate and adding wherein—an oxygenate is added—to the feed supplied to the bed of reforming catalyst to regenerate the bed of reforming catalyst,

and maintaining the hydrogen concentration (as measured in dry reformate) above 25% throughout the operation of the processor, wherein the hydrogen concentration is measured by gas chromatography after the reformate is passed through a drier.

- 3. (Previously Presented) A method according to either claim 1 or claim 2, whereby water is temporarily added to the fuel.
- 4. (Previously Presented) A method according to claims 1 or 2 in which air is temporarily added to the feed.
- 5. (Previously Presented) A method according to claims 1 or 2 in which an oxygenate is added to the feed.
- 6. (Previously Presented) A method according to claim 5 in which the oxygenate is MTBE (methyl-tert-butylether).
- 7. (Currently Amended) A method according to claims 1 or 2 in which the catalyst bed temperature of the bed of reforming catalyst is raised temporarily by an external heat source.

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8. (Currently Amended) A method according to claims 1 or 2 in which the temperature of one or more of the reactant feeds the fuel, air or steam is raised temporarily.